

APPENDIX

Customer No. 28596
Attorney Docket No. GK/57

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Dove)	Group Art Unit: 3673
)	
Serial No.: 10/823,512)	Examiner: Alison K. Pickard
)	
Filed: April 13, 2004)	Conf. No.: 3277
)	
For: Coil Gasket)	
)	

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

DECLARATION OF KEVIN E. DOVE UNDER 37 C.F.R. §1.131

Dear Sir:

I, Kevin E. Dove, named as inventor in the above-referenced patent application, state as follows:

1. The present invention was completed at a date prior to December 18, 2003, that is, the effective date of US Patent Publication No. 2003/0230859 A1, which was cited by the Examiner in the above-referenced patent application. The effective date corresponds to the US publication date.
2. To establish the date of completion of the present invention as prior to the effective date of the reference, copies of notebook pages 76-79 of notebook FR274 are attached as Exhibit 1.
3. I state that the actual dates of Exhibit I are prior to the effective date of US Patent Publication No. 2003/0230859 A1.
4. The work corresponding to Exhibit I was performed by me, or by technicians working under my direction, in the United States.

I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to

be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Full name of inventor: Kevin E. Dove

Inventor's signature 

Date: 1/18/2007 Country of Citizenship U.S.A.

Residence 2605 Whittier Place, Wilmington, Delaware 19808, U.S.A.

EXHIBIT 1

76

DATE 7/16/02

SUBJECT OF EXP'T.

Low stress to seal gasket formed from ePTFE tape instead of being cut from a sheet

Objective: 1) Create a method for making large diameter gaskets from ePTFE tape such as Gore-Tex® Series 600 tape to minimize the amount of scrap material (maximize material utilization). Gasket cutting operations from sheet materials have scrap rates around 40% - 50% (60% - 50% material utilization). Using a tape material to form an annular gasket will result in lower scrap rates than those associated with the drops from cut sheets.

2) (Subject of the invention) Create a low stress to seal gasket using biaxially expanded PTFE (Gore-Tex Series 600) by wrapping the tape material around a die, having the dimensions of the inner dimensions of the gasket, in the form of a coil using FEP, PFA or other melt processable fluoropolymer as an adhesive to bond the rings of the coil together and as a barrier layer to prevent permeation through the gasket in the radial direction. The membrane layers in the ePTFE tape should be horizontally oriented during the "coiling" process so that the gasket will benefit from the attributes of expanded PTFE such as low creep. The membrane layers could be oriented in the vertical direction which would result in a "softer" gasket but will have significant cold flow under compressive loads as compared with the horizontal orientation of the membrane layers.

Redacted - not relevant to the claimed invention

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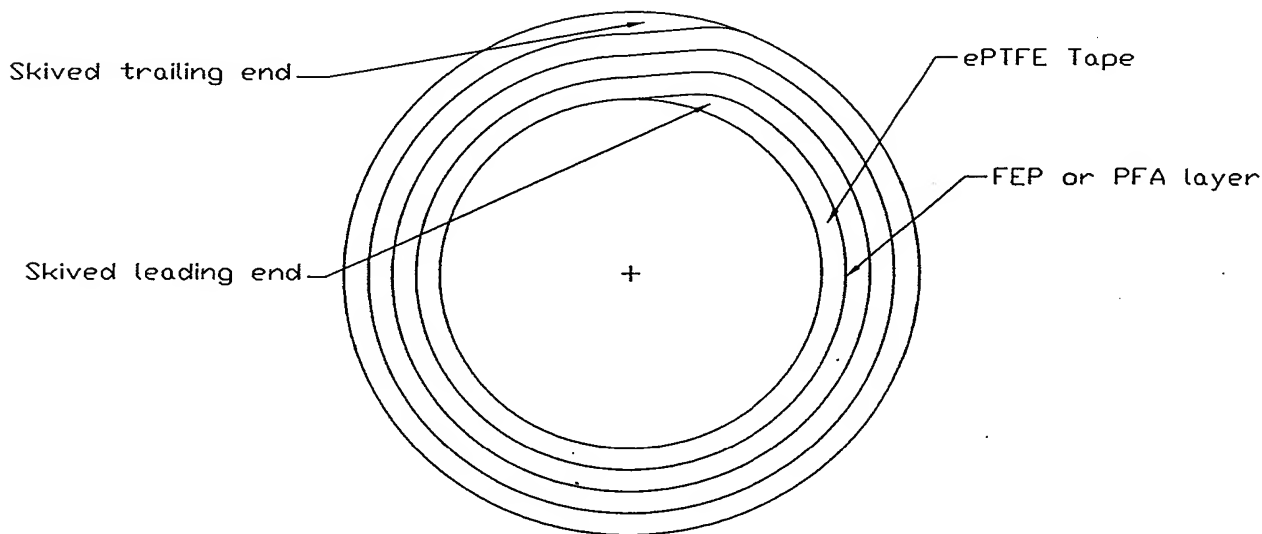
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7/16/02

Jessica L. Chellas

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Gasket made from coiling of
biaxially expanded PTFE tape
material



Top View

Even though there is a continuous leak path through the length of the coil, the length of the coil is long enough to restrict permeation from the leading end of the tape material to the trailing end. Permeation in the radial direction is prevented by the PFA (FEP, etc) barrier layers.

EXPERIMENTER

WITNESS

[Signature]
Jessica L. Chellars

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SUBJECT OF EXP'T.

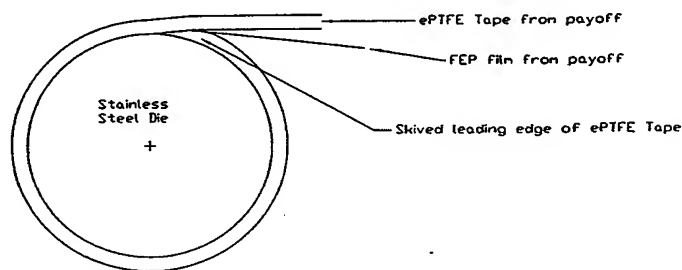
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Method used to make prototype gaskets:

- 1) 6mm thick by 6mm wide Series 600 Tape was used with FEP as the adhesive/barrier material. The thickness of the FEP was 0.002 inches (0.05 mm). The FEP had been slit to a 6mm width. The leading edge of the ePTFE tape was cut (skived) at an angle of about 10°-20°. (See the picture on Pg. 77) The leading edge of the ePTFE tape was taped to a circular, stainless steel die having a diameter of 5.5" using Kapton tape to secure the end. The FEP leading edge was also taped to the die using Kapton tape. See the illustration below.

Illustration of method used to make prototypes of coiled gasket



Top View

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7/16/02

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SUBJECT OF EXPT.

Continued From Page 78

79

The coiling continued for six revolutions. The trailing edge of the ePTFE Tape was taped to previous coil using Kapton tape to secure it in place and prevent the coil from unwinding. The FEP had been trimmed to the end of the PTFE.

The coil of material and die was placed into an oven. The oven was ramped to $\sim 300^{\circ}\text{C}$ in order to melt the FEP. After approximately 30 minutes at 300°C the material was removed from the oven and allowed to cool. After cooling the material was removed from the die. For cosmetic purposes the coil of material was trimmed using the laser cutter to an I.D. of 5.625" and an O.D. of 7".

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WITNESS

J. E. S. D.
Jennifer L. Challas

DATE

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